

***FINANCIAL  
SECTION***



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## INDEPENDENT AUDITORS' REPORT

The Honorable County Executive and  
Members of County Council  
Baltimore County, Maryland

### **Report on the Financial Statements**

We have audited the accompanying financial statements of the Employees' Retirement System of Baltimore County, Maryland (the System), which comprise the statements of fiduciary net position as of June 30, 2018 and 2017, the statements of changes in fiduciary net position for the years then ended and the related notes to the financial statements, as listed in the table of contents, which collectively comprise the System's basic financial statements.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditors' Responsibility***

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### ***Opinion***

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of June 30, 2018 and 2017, and the respective changes in financial position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

# FINANCIAL SECTION

The Honorable County Executive and  
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## **Other Matters**

### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, and the schedules of changes in net pension liability and related ratios, employer contributions and investment returns and related notes, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### *Other Information*

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the System's basic financial statements. The schedules of investment expenses and administrative expenses, introductory, investment, actuarial, and statistical sections, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The schedules of investment expenses and administrative expenses are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedules of investment expenses and administrative expenses are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The information in the introductory, investment, actuarial, and statistical sections has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

## **Other Reporting Required by Government Auditing Standards**

In accordance with *Government Auditing Standards*, we have also issued our report dated December 20, 2018 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.



**CliftonLarsonAllen LLP**

Baltimore, Maryland  
December 20, 2018

## Management's Discussion and Analysis

Our discussion and analysis of the financial performance of the Employees' Retirement System of Baltimore County (the "System") provides an overview of financial activities for the fiscal years ended June 30, 2018 (FY 2018) and June 30, 2017 (FY 2017). Please read it in conjunction with the transmittal letter in the Introductory Section beginning on Page 2 and the basic financial statements, which follow this discussion.

### FINANCIAL HIGHLIGHTS

- The System's net position restricted for pensions at the close of FY 2018 and FY 2017 was \$2.79 billion and \$2.69 billion, respectively.
- Contributions for FY 2018 and FY 2017 (excluding the Pension Obligation Bonds) were \$174.6 million and \$161.4 million, respectively, an increase of 8.2%. The employer contribution for FY 2018 and FY 2017 were \$128.9 million and \$118.2 million, respectively, an increase of 9.1%. This increase was primarily due to the change in the discount rate; asset experience; increase due to salary changes, and the scheduled increase in unfunded accrued liability contributions. This increase was partially offset due to the addition of assets from the Pension Obligation Bond Offering.
- Net investment gain of \$212.5 million resulted in a time-weighted, gross of fees return of 8.2% for FY 2018 vs. net investment gain of \$330.7 million for FY 2017 with a time-weighted, gross of fees return of 14.1%. The Comparative Balanced Index was 8.3% and 14.0% respectively, for the same periods.
- Total deductions increased from \$280.2 million in FY 2017 to \$286.9 million in FY 2018, an increase of 2.4%. The increase was primarily due to an increase in benefit payments.
- The System's Total Pension Liability was \$4.6 billion for FY 2018 and \$4.4 billion for FY 2017. The Fiduciary Net Position, as a percentage of Total Pension Liability was 60.88% as of June 30, 2018, and 61.46% as of June 30, 2017.
- Covered payroll was \$572.8 million as of June 30, 2018 and \$569.3 million as of June 30, 2017. The System had a Net Pension Liability of \$1.79 billion for FY 2018, and \$1.68 billion for FY 2017. The Net Pension Liability as a percentage of Covered payroll was 312.7% as of June 30, 2018 and 296.0% as of June 30, 2017.
- The System's funding objective is to meet long-term benefit obligations through contributions and investment income. Based on the latest actuarial valuations, as of January 1, 2018 and June 30, 2016, the funded ratio was 63.2% and 65.1%, respectively.

### THE STATEMENT OF FIDUCIARY NET POSITION AND THE STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

This Comprehensive Annual Financial Report (CAFR) consists of two financial statements: Statements of Fiduciary Net Position (Page 21) and Statements of Changes in Fiduciary Net Position (Page 22). These financial statements report information about the System as a whole, and about its financial condition that should help answer the question: Is the System, as a whole, better or worse off as a result of this year's activities? These statements include all assets and liabilities that are due and payable using the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, all revenues and expenses are taken into account regardless of when cash is received or paid.

The Statements of Fiduciary Net Position present all of the System's assets and liabilities, with the difference between the two reported as the net position. Over time, increases and decreases in the net position measure whether the System's assets available for benefits is improving or deteriorating. The Statements of Changes in Fiduciary Net Position present how the System's net position changed during the most recent fiscal year. These two sets of financial statements should be reviewed along with the Notes to the Financial Statements, and the Required Supplementary Information (RSI), including, the Schedule of Changes in Net Pension Liability, the Schedule of Employer Contributions, the Schedule of Investment Returns, and the Notes to the RSI, to determine whether the System is becoming financially stronger or weaker and to understand changes over time in the funded status of the System.

# FINANCIAL SECTION

## Management's Discussion and Analysis, continued

### FINANCIAL ANALYSIS

The System's overall funding objective is to accumulate sufficient assets over time to meet its long-term benefit obligations as they become due.

The System's assets exceeded its due and payable liabilities at the close of FY 2018 and FY 2017 by \$2.79 billion and \$2.69 billion, respectively. In FY 2018, the net position restricted for pension benefits increased 3.7% or \$100.2 million from FY 2017. In FY 2017, the net position restricted for pension benefits increased 15.6% or \$361.9 million from FY 2016 primarily due to the additional employer contribution of \$149.1 million from the net issuance of Pension Obligation Bonds.

The following table illustrates a condensed version of the statements of Fiduciary Net Position and Changes in Fiduciary Net Position for the System, Plan A and Plan B for fiscal years ending 2018, 2017 and 2016.

### BALTIMORE COUNTY EMPLOYEES' RETIREMENT SYSTEM FIDUCIARY NET POSITION AS OF JUNE 30, 2018, 2017 AND 2016 (IN THOUSANDS)

#### THE SYSTEM

	<u>FY 2018</u>	<u>FY 2017</u>	<u>FY 2016</u>	<u>2018-2017</u> <u>% Change</u>	<u>2017-2016</u> <u>% Change</u>
<b>Assets</b>					
Cash and short term investments	\$ 38,914	\$ 34,349	\$ 37,834	13.3%	-9.2%
Collateral for loaned securities	19,308	21,875	24,850	-11.7%	-12.0%
Receivables	14,615	18,837	19,647	-22.4%	-4.1%
Investments	2,766,971	2,677,921	2,296,998	3.3%	16.6%
Total assets	<u>2,839,808</u>	<u>2,752,982</u>	<u>2,379,329</u>	3.2%	15.7%
<b>Liabilities</b>					
Accounts payable and other accrued liabilities	32,851	43,625	28,962	-24.7%	50.6%
Obligations under securities lending	19,308	21,875	24,850	-11.7%	-12.0%
Total liabilities	<u>52,159</u>	<u>65,500</u>	<u>53,812</u>	-20.4%	21.7%
<b>Net position restricted for pensions</b>	<u>\$2,787,649</u>	<u>\$2,687,482</u>	<u>\$2,325,517</u>	3.7%	15.6%

# FINANCIAL SECTION

## Management's Discussion and Analysis, continued

### BALTIMORE COUNTY EMPLOYEES' RETIREMENT SYSTEM FIDUCIARY NET POSITION AS OF JUNE 30, 2018, 2017 AND 2016 (IN THOUSANDS)

#### PLAN A

	<u>FY 2018</u>	<u>FY 2017</u>	<u>FY 2016</u>	<u>2018-2017 % Change</u>	<u>2017-2016 % Change</u>
<b>Assets</b>					
Cash and short term investments	\$ 37,875	\$ 32,760	\$ 36,076	15.6%	-9.2%
Collateral for loaned securities	18,563	21,227	24,254	-12.6%	-12.5%
Receivables	13,583	17,868	18,834	-24.0%	-5.1%
Investments	2,660,331	2,598,667	2,241,932	2.4%	15.9%
Total assets	<u>2,730,352</u>	<u>2,670,522</u>	<u>2,321,096</u>	2.2%	15.1%
<b>Liabilities</b>					
Accounts payable and other accrued liabilities	29,209	40,888	26,602	-28.6%	53.7%
Obligations under securities lending	18,563	21,227	24,254	-12.6%	-12.5%
Total liabilities	<u>47,772</u>	<u>62,115</u>	<u>50,856</u>	-23.1%	22.1%
<b>Net position restricted for pensions</b>	<u>\$ 2,682,580</u>	<u>\$ 2,608,407</u>	<u>\$ 2,270,240</u>	2.8%	14.9%

#### PLAN B

	<u>FY 2018</u>	<u>FY 2017</u>	<u>FY 2016</u>	<u>2018-2017 % Change</u>	<u>2017-2016 % Change</u>
<b>Assets</b>					
Cash and short term investments	\$ 1,039	\$ 1,589	\$ 1,758	-34.6%	-9.6%
Collateral for loaned securities	745	648	596	15.0%	8.7%
Receivables	1,032	969	813	6.5%	19.2%
Investments	106,640	79,254	55,066	34.6%	43.9%
Total assets	<u>109,456</u>	<u>82,460</u>	<u>58,233</u>	32.7%	41.6%
<b>Liabilities</b>					
Accounts payable and other accrued liabilities	3,642	2,737	2,360	33.1%	16.0%
Obligations under securities lending	745	648	596	15.0%	8.7%
Total liabilities	<u>4,387</u>	<u>3,385</u>	<u>2,956</u>	29.6%	14.5%
<b>Net position restricted for pensions</b>	<u>\$ 105,069</u>	<u>\$ 79,075</u>	<u>\$ 55,277</u>	32.9%	43.1%

# FINANCIAL SECTION

## Management's Discussion and Analysis, continued

### BALTIMORE COUNTY EMPLOYEES' RETIREMENT SYSTEM CHANGES IN FIDUCIARY NET POSITION FOR THE FISCAL YEARS ENDED JUNE 30, 2018, 2017 AND 2016 (IN THOUSANDS)

#### THE SYSTEM

	<u>FY 2018</u>	<u>FY 2017</u>	<u>FY 2016</u>	<u>2018-2017 % Change</u>	<u>2017-2016 % Change</u>
<b>Additions</b>					
Contributions:					
Employer - Pension Bonds	\$ -	\$ 150,000	\$ -	N/A	N/A
Employer	128,896	118,155	105,742	9.1%	11.7%
Member	45,697	43,244	40,812	5.7%	6.0%
Total contributions	<u>174,593</u>	<u>311,399</u>	<u>146,554</u>	-43.9%	112.5%
Investment income (loss)	212,292	330,543	(26,674)	-35.8%	1339.2%
Income from securities lending	<u>184</u>	<u>203</u>	<u>270</u>	-9.4%	-24.8%
Net investment income (loss)	<u>212,476</u>	<u>330,746</u>	<u>(26,404)</u>	-35.8%	1352.6%
Total additions	<u>387,069</u>	<u>642,145</u>	<u>120,150</u>	-39.7%	434.5%
<b>Deductions</b>					
Benefits	280,832	272,659	249,016	3.0%	9.5%
Refunds of contributions	4,798	5,128	4,143	-6.4%	23.8%
Administrative expenses	1,272	1,511	1,647	-15.8%	-8.3%
Fiscal Charges - Pension Bonds	-	882	-	N/A	N/A
Total deductions	<u>286,902</u>	<u>280,180</u>	<u>254,806</u>	2.4%	10.0%
<b>Net increase (decrease)</b>	100,167	361,965	(134,656)	-72.3%	-368.8%
<b>Net position restricted for pension benefits</b>					
<b>Beginning of year</b>	<u>2,687,482</u>	<u>2,325,517</u>	<u>2,460,173</u>	15.6%	-5.5%
<b>End of year</b>	<u>\$2,787,649</u>	<u>\$2,687,482</u>	<u>\$2,325,517</u>	3.7%	15.6%

# FINANCIAL SECTION

## Management's Discussion and Analysis, continued

### BALTIMORE COUNTY EMPLOYEES' RETIREMENT SYSTEM CHANGES IN FIDUCIARY NET POSITION FOR THE FISCAL YEARS ENDED JUNE 30, 2018, 2017 AND 2016 (IN THOUSANDS)

#### PLAN A

	<u>FY 2018</u>	<u>FY 2017</u>	<u>FY 2016</u>	<u>2018-2017</u> <u>% Change</u>	<u>2017-2016</u> <u>% Change</u>
<b>Additions</b>					
Contributions:					
Employer - Pension Bonds	\$ -	\$ 150,000	\$ -	N/A	N/A
Employer	123,028	115,276	104,306	6.7%	10.5%
Member	28,504	28,445	28,491	0.2%	-0.2%
Total contributions	<u>151,532</u>	<u>293,721</u>	<u>132,797</u>	-48.4%	121.2%
Investment income (loss)	205,929	321,576	(26,176)	-36.0%	1328.5%
Income from security lending	178	198	264	-10.1%	25.0%
Net investment income (loss)	<u>206,107</u>	<u>321,774</u>	<u>(25,912)</u>	-35.9%	1341.8%
Total additions	<u>357,639</u>	<u>615,495</u>	<u>106,885</u>	-41.9%	475.8%
<b>Deductions</b>					
Benefits	280,704	272,576	248,972	3.0%	9.5%
Refunds of Contributions	1,539	2,402	1,543	-35.9%	55.7%
Administrative Expenses	1,223	1,468	1,608	-16.7%	-8.7%
Fiscal Charges - Pension Bonds	-	882	-	N/A	N/A
Total deductions	<u>283,466</u>	<u>277,328</u>	<u>252,123</u>	2.2%	10.0%
Net increase (decrease)	74,173	338,167	(145,238)	-78.1%	-332.8%
<b>Net position restricted for pension benefits</b>					
Beginning of year	<u>2,608,407</u>	<u>2,270,240</u>	<u>2,415,478</u>	14.9%	-6.0%
End of year	<u>\$ 2,682,580</u>	<u>\$ 2,608,407</u>	<u>\$ 2,270,240</u>	2.8%	14.9%



# FINANCIAL SECTION

## Management's Discussion and Analysis, continued

### BALTIMORE COUNTY EMPLOYEES' RETIREMENT SYSTEM CHANGES IN FIDUCIARY NET POSITION FOR THE FISCAL YEARS ENDED JUNE 30, 2018, 2017 AND 2016 (IN THOUSANDS)

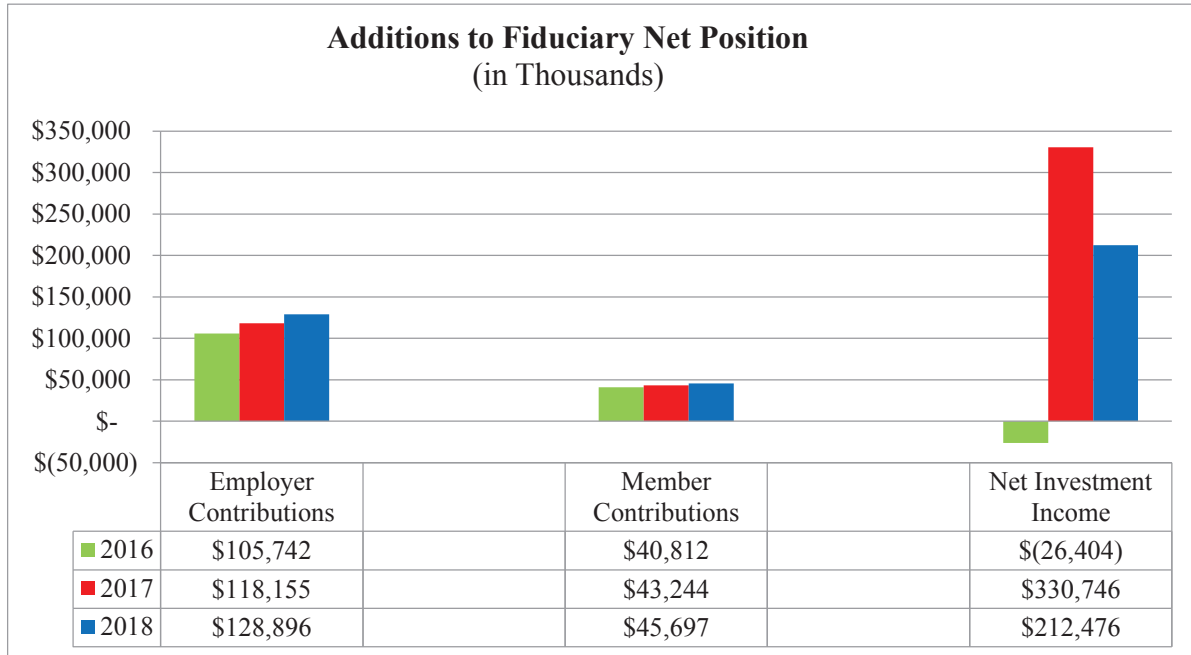
#### PLAN B

	<u>FY 2018</u>	<u>FY 2017</u>	<u>FY 2016</u>	<u>2018-2017</u> <u>% Change</u>	<u>2017-2016</u> <u>% Change</u>
<b>Additions</b>					
Contributions:					
Employer	\$ 5,868	\$ 2,879	\$ 1,436	103.8%	100.5%
Member	17,193	14,799	12,321	16.2%	20.1%
Total contributions	<u>23,061</u>	<u>17,678</u>	<u>13,757</u>	30.5%	28.5%
Investment income (loss)	6,363	8,967	(498)	-29.0%	1900.6%
Income from security lending	6	5	6	20.0%	-16.7%
Net investment income (loss)	<u>6,369</u>	<u>8,972</u>	<u>(492)</u>	-29.0%	1923.6%
Total additions	<u>29,430</u>	<u>26,650</u>	<u>13,265</u>	10.4%	100.9%
<b>Deductions</b>					
Benefits	128	83	44	54.2%	88.6%
Refunds of contributions	3,259	2,726	2,600	19.6%	4.8%
Administrative Expenses	49	43	39	14.0%	10.3%
Total deductions	<u>3,436</u>	<u>2,852</u>	<u>2,683</u>	20.5%	6.3%
<b>Net increase</b>	25,994	23,798	10,582	9.2%	124.9%
<b>Net position restricted for pension benefits</b>					
Beginning of year	<u>79,075</u>	<u>55,277</u>	<u>44,695</u>	43.1%	23.7%
End of year	<u>\$ 105,069</u>	<u>\$ 79,075</u>	<u>\$ 55,277</u>	32.9%	43.1%

# FINANCIAL SECTION

## Management's Discussion and Analysis, continued

### THE SYSTEM



#### ADDITIONS TO FIDUCIARY NET POSITION

The reserves needed to finance retirement benefits are accumulated through the collection of employer and employee contributions and earnings on investments. Employer contributions (excluding Pension Obligation Bonds), employee contributions, and net investment income for fiscal years 2018 and 2017 were \$387.1 million and \$492.1 million, respectively.

Additions for FY 2018 were \$387.1 million. Employer contributions (excluding Pension Obligation Bonds) for FY 2018 increased by \$10.7 million or 9.1% over FY 2017. This increase was due to the change of discount rate, asset experience (based on the actuarial value of assets), the scheduled increase in amortization contribution, and other factors including experience losses.

Additions for FY 2017 were \$642.1 million, an increase of \$521.9 million over FY 2016. Employer contributions (excluding Pension Obligation Bonds) for FY 2017 increased by \$12.4 million or 11.7% over FY 2016. This increase was due to asset experience based on the actuarial value of assets, the scheduled increase in the unfunded accrued liability, and other factors including experience losses.

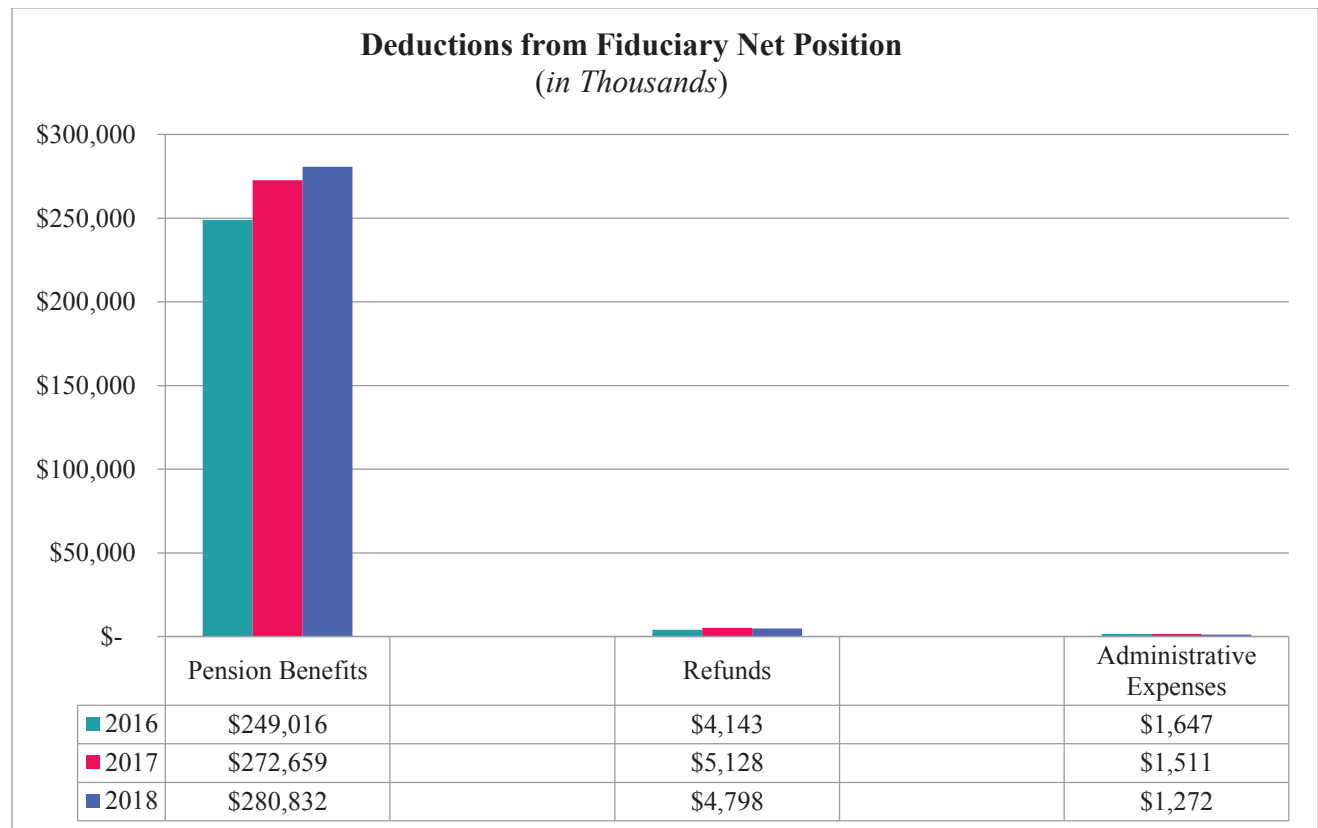
The overall System portfolio, calculated using a time-weighted rate of return methodology, returned 8.2% gross of fees for FY 2018. Contributing to these returns were gains realized from the US equity portfolio of 18.1%, the international equity portfolio of 5.1%, the global asset allocation portfolio of 6.1%, the real estate portfolio of 9.2%, the private equity portfolio of 13.5%, and the fixed income portfolio of 2.3%.

# FINANCIAL SECTION

## Management's Discussion and Analysis, continued

### DEDUCTIONS FROM FIDUCIARY NET POSITION

The deductions include pension payments to members and beneficiaries, refunds of contributions to former members, and the cost of administering the System. Total deductions for FY 2018 increased by 2.4% or \$6.7 million over FY 2017 due to the increase in benefit payments. Total deductions for FY 2017 increased by 10.0% or \$25.4 million over FY 2016 due to the increase in benefit payments and refunds.



### RETIREMENT SYSTEM AS A WHOLE

The net position held in trust for pension benefits increased by \$100.2 million or 3.7% in FY 2018 over FY 2017. Based on the latest actuarial valuation available, the System's funding ratio, as determined by the County's actuary, was 63.2% as of January 1, 2018 and 65.1% at June 30, 2016. The Board continues to utilize the concepts of prudent investment management, cost controls and strategic planning.

### CONTACTING SYSTEM FINANCIAL MANAGEMENT

This financial report is designed to provide the Retirement Board, our membership, taxpayers, investors, and creditors with a general overview of the System's finances and to demonstrate the System's accountability for the money it receives. If you have any questions about this report or need additional financial information, you may contact the Office of Budget and Finance, Mezzanine, Historic Court House, 400 Washington Avenue, Towson, Maryland 21204 or email [ers@baltimorecountymd.gov](mailto:ers@baltimorecountymd.gov).

The ERS CAFR may be found online at [www.baltimorecountymd.gov/Agencies/budfin/retirement/index.html](http://www.baltimorecountymd.gov/Agencies/budfin/retirement/index.html).

# FINANCIAL SECTION

## Statements of Fiduciary Net Position As of June 30, 2018 and 2017 (IN THOUSANDS)

	FY 2018			FY 2017		
	Plan A	Plan B	The System	Plan A	Plan B	The System
<b>Assets:</b>						
Cash and short term investments	\$ 37,875	\$ 1,039	\$ 38,914	\$ 32,760	\$ 1,589	\$ 34,349
Collateral for loaned securities	18,563	745	19,308	21,227	648	21,875
Receivables:						
Accrued interest and dividend income	2,494	98	2,592	3,464	105	3,569
Receivable for investments sold	10,362	416	10,778	13,674	417	14,091
Receivables - other	727	518	1,245	730	447	1,177
Total receivables	13,583	1,032	14,615	17,868	969	18,837
Investments, at fair value						
U.S. Government and agency securities	90,570	3,630	94,200	128,585	3,921	132,506
Municipal debt	-	-	-	2,021	62	2,083
Foreign debt	26,407	1,059	27,466	6,095	186	6,281
Corporate debt	92,070	3,691	95,761	116,162	3,543	119,705
Stocks	538,774	21,597	560,371	529,329	16,144	545,473
Bond mutual funds	424,690	17,024	441,714	372,232	11,352	383,584
Stock mutual funds	797,694	31,976	829,670	803,238	24,497	827,735
Real estate equity funds	147,990	5,932	153,922	135,584	4,135	139,719
Private equity funds	128,969	5,170	134,139	115,816	3,532	119,348
Hedge funds	255	10	265	698	21	719
Global asset allocation	412,912	16,551	429,463	388,907	11,861	400,768
Total investments	2,660,331	106,640	2,766,971	2,598,667	79,254	2,677,921
 Total assets	 2,730,352	 109,456	 2,839,808	 2,670,522	 82,460	 2,752,982
<b>Liabilities:</b>						
Investment expenses payable	3,108	125	3,233	3,429	104	3,533
Refunds payable	56	2,613	2,669	56	1,884	1,940
Payable for investments purchased	22,527	904	23,431	24,571	749	25,320
Payable for collateral for loaned securities	18,563	745	19,308	21,227	648	21,875
Payables - other	3,518	-	3,518	12,832	-	12,832
Total liabilities	47,772	4,387	52,159	62,115	3,385	65,500
 <b>Net position restricted for pension benefits</b>	 <b>\$ 2,682,580</b>	 <b>\$ 105,069</b>	 <b>\$ 2,787,649</b>	 <b>\$ 2,608,407</b>	 <b>\$ 79,075</b>	 <b>\$ 2,687,482</b>

The accompanying notes are an integral part of the financial statements.

# FINANCIAL SECTION

## Employees' Retirement System of Baltimore County

### Statements of Changes in Fiduciary Net Position For the Years Ended June 30, 2018 and 2017

(IN THOUSANDS)

	FY 2018			FY 2017		
	Plan A	Plan B	The System	Plan A	Plan B	The System
<b>Additions</b>						
Contributions:						
Employer - Pension Bonds	\$ -	\$ -	\$ -	\$ 150,000	\$ -	\$ 150,000
Employer	123,028	5,868	128,896	115,276	2,879	118,155
Member	28,504	17,193	45,697	28,445	14,799	43,244
Total contributions	151,532	23,061	174,593	293,721	17,678	311,399
Investment income:						
Net increase/decrease in the fair value of investments	184,402	5,633	190,035	299,811	8,398	308,209
Interest and dividends	42,157	1,501	43,658	38,870	1,065	39,935
	226,559	7,134	233,693	338,681	9,463	348,144
Less: Investment expenses	(20,630)	(771)	(21,401)	(17,105)	(496)	(17,601)
Investment income	205,929	6,363	212,292	321,576	8,967	330,543
Securities lending:						
Securities lending income	89	2	91	218	5	223
Borrower rebates	166	7	173	55	2	57
Agent fees	(77)	(3)	(80)	(75)	(2)	(77)
Net income from securities lending	178	6	184	198	5	203
Total net investment income	206,107	6,369	212,476	321,774	8,972	330,746
Total additions	357,639	29,430	387,069	615,495	26,650	642,145
<b>Deductions</b>						
Benefits	280,704	128	280,832	272,576	83	272,659
Refunds of contributions	1,539	3,259	4,798	2,402	2,726	5,128
Administrative expenses	1,223	49	1,272	1,468	43	1,511
Fiscal Charges - Pension Bonds	-	-	-	882	-	882
Total deductions	283,466	3,436	286,902	277,328	2,852	280,180
<b>Net increase</b>	74,173	25,994	100,167	338,167	23,798	361,965
<b>Net position restricted for pension benefits</b>						
Beginning of year	2,608,407	79,075	2,687,482	2,270,240	55,277	2,325,517
End of year	\$ 2,682,580	\$ 105,069	\$ 2,787,649	\$ 2,608,407	\$ 79,075	\$ 2,687,482

The accompanying notes are an integral part of the financial statements.

# FINANCIAL SECTION

## Notes to Financial Statements

### 1. Plan Description

The Employees' Retirement System of Baltimore County (the "System") is a cost-sharing multiple-employer defined benefit public employee retirement system that acts as a common investment and administrative agent serving five entities including Baltimore County (the "County") and certain employees of the Baltimore County Board of Education, Baltimore County Board of Library Trustees, the Community College of Baltimore County and the Baltimore County Revenue Authority. The System is not an employer. The System provides retirement, disability and death benefits to plan members and beneficiaries. The authority to establish and maintain the System is specified in Section 5-1-101 of the Baltimore County Code (the "Code").

#### *Separate Plans:*

On October 15, 2012, the County Council passed Bill No. 65-12 that formally closed the System for members hired prior to July 1, 2007, now known as members of "Plan A". Members hired on or after July 1, 2007 are members of "Plan B".

The System is considered part of the Baltimore County, Maryland reporting entity and its financial statements are included in the County's basic financial statements as a pension trust fund. The System is fiscally dependent on the County by virtue of the legislative and executive controls exercised with respect to its operations, policies and administrative budget. In accordance with Section 5-1-238 of the Code, responsibility for the proper operation of the System is vested in an eleven-member Board of Trustees (the "Board"), comprised of a combination of ex-officio, appointed and elected representatives. The general administration of the System is vested in the Director of Budget and Finance.

Plan Membership: As of June 30, 2018 and 2017, System membership consisted of:

Membership Status (as of June 30, 2018)	Plan - A* Count	Plan - B Count	Total Count
Inactive plan members and beneficiaries currently receiving benefits	8,131	7	8,138
Inactive plan members entitled, but not yet receiving benefits	427	8	435
Active plan members	<u>4,738</u>	<u>4,956</u>	<u>9,694</u>
Total	<u>13,296</u>	<u>4,971</u>	<u>18,267</u>

\*Plan A is closed to new members hired on or after July 1, 2007.

Membership Status (as of June 30, 2017)	Plan - A* Count	Plan - B Count	Total Count
Inactive plan members and beneficiaries currently receiving benefits	7,964	2	7,966
Inactive plan members entitled, but not yet receiving benefits	440	2	442
Active plan members	<u>5,126</u>	<u>4,454</u>	<u>9,580</u>
Total	<u>13,530</u>	<u>4,458</u>	<u>17,988</u>

\*Plan A is closed to new members hired on or after July 1, 2007.

## Notes to Financial Statements, continued

The following is a brief description of the System's plan provisions. For a more complete description, see the Summary of Plan Provisions included in the Actuarial Section of this report.

Members are designated as classified or merit system employees, part-time employees, non-merit employees, elected officials, department heads, or agency employees. Merit system employees include full-time general employees, police officers, firefighters, deputy sheriffs and correctional officers. Agency employees include the Board of Education, the Board of Library Trustees, the Community College of Baltimore County and the Baltimore County Revenue Authority. Agency employees that are not eligible to participate in the Maryland State Retirement and Pension Systems are entitled to membership in the System. The term "general employees" is hereafter used to refer to both county general employees and agency employees.

System membership is compulsory for merit system employees as a condition of employment, except for those members who were hired at age 55 or over. Merit employees, exclusive of police officers and firefighters, are required to join the System within the first sixty days. Police officers and firefighters are required to join the System as a condition of employment. Waived time is not eligible for buy back.

Part-time employees, non-merit employees, elected officials, department heads, and merit system employees hired at age 55 or over, and agency employees have the option to join the system within sixty days or forfeit the right to join the System. Waived time is not eligible for buy back.

Members hired prior to July 1, 2007 are vested after five years of membership. System members hired on or after July 1, 2007 are vested after ten years of creditable service.

Employees who terminate employment or die in service prior to meeting vesting eligibility are entitled to a refund of their contributions. Interest is credited on member contributions at the rate of 5% per annum. Employers are required to contribute an actuarially determined amount annually to finance the System as specified by Sections 5-1-203 and 5-1-257 of the Code.

Members are eligible for a normal retirement for service based on age and/or years of creditable service. There is no mandatory retirement age for general employees, deputy sheriffs and correctional officers. Firefighters and police officers must retire at age 65 unless approved for continuation of service by the Board on an annual basis.

The County has adopted a Back DROP (the election is made at date of retirement) for Police Officers and Firefighters under which eligible active members may elect to receive a lump sum payment with a 6% bonus at retirement in exchange for a reduced monthly benefit for life. The DROP period is between three and five years, effective with retirements that occurred on or after July 1, 2004. Police Officers and Firefighters hired on or after July 1, 2007 are not eligible to participate in the Back DROP.

The County has adopted a Back DROP (the election is made at date of retirement) for Correctional Officers and Deputy Sheriffs hired prior to July 1, 2007. Eligible active members may elect to receive a lump sum payment at retirement in exchange for a reduced monthly benefit. The Back DROP period is between three and five years, effective with retirements that occur on or after July 1, 2010. Correctional Officers and Deputy Sheriffs hired on or after July 1, 2007 are not eligible to participate in the Back DROP.

## Notes to Financial Statements, continued

The County has adopted a Forward DROP (the election is made at least 5 years prior to the date of retirement) for General Employees hired prior to July 1, 2007. Eligible active members may elect to receive a lump sum payment at retirement in exchange for a reduced monthly benefit. The Forward DROP period is between five and ten years, effective with retirements that occur on or after July 1, 2012. A member may opt out of the DROP at any time and the member's benefit shall be treated as if the member had not elected to enter the DROP. General Employees hired on or after July 1, 2007 are not eligible to participate in the Forward DROP.

An ordinary disability retirement may be granted to a member who can no longer perform their job due to a non-occupational related injury. Police officers and firefighters ("Group 4") hired prior to July 1, 2007 must have 5 years of creditable service while all other members must have ten years of creditable service. All members must be medically certified as incapacitated for continued performance of their duties. The ordinary disability retirement allowance is determined in accordance with Section 5-1-222 of the Code.

An accidental disability retirement may be granted to a member who has been incapacitated for duty as a result of an occupational related injury. Accidental disability payments are tiered (75%, 66.67%, or 50%), based upon the degree of disability. The accidental disability retirement allowance is determined in accordance with Section 5-1-226 of the Code.

An ordinary death benefit is granted as a result of a member's death from non-occupational causes. A member's designated beneficiary or estate receives a lump sum payment of the member's contributions plus interest. Additionally, after one year of creditable service, the member's designated beneficiary or estate may receive a minimum one-time payment equal to 100% of the member's annual earnable compensation. If a member was eligible for a service retirement or had 15 years of creditable service at the time of death, the spouse, if designated as the beneficiary, may receive a retirement allowance based on service years equivalent to a 100% survivorship option (*Option 2*).

An accidental death benefit is granted as the result of death from an occupational related injury. The dependent beneficiary of a general employee may receive an allowance equal to  $66\frac{2}{3}\%$  of average final compensation (AFC) plus their annuity (i.e. employee contributions plus interest). The dependent beneficiary of a firefighter or police officer may receive an allowance equal to 100% of the annual earnable compensation at the time of death plus their annuity. If a member was eligible for a service retirement or had 15 years of creditable service at the time of death, the spouse, if designated as the beneficiary, may receive a retirement allowance based on service years equivalent to a 100% survivorship option (*Option 2*).

Retirement allowances are comprised of an annuity equal to the actuarial equivalent of the accumulated contributions plus a pension which together with the annuity shall provide a total allowance as provided for in the System's plan. The retirement allowance is determined based on the AFC and number of years of creditable service. AFC is defined as the rate of annual earnable compensation during the twelve or thirty-six consecutive calendar months of service, depending upon group and hire date, affording the highest average. The normal retirement for service allowance is determined as follows:



# FINANCIAL SECTION

## Notes to Financial Statements, continued

### Employee designation

### Allowance formula for Vested Employees

General employees - Plan A (Hired prior to July 1, 2007)	1.82% of AFC times the number of years of creditable service for: (i) 30 years of creditable service or (ii) Age 65 with 5 years of creditable service or, General employees hired prior to July 1, 2007, retiring at age 60 with less than 30 years of creditable service, will receive a blended benefit, (i.e. 1.82% of AFC times the number of years of creditable service earned prior to July 1, 2007, plus 1.43% of AFC times the number of years of creditable service earned on or after July 1, 2007).
General employees – Plan B (Hired on or after July 1, 2007)	1.43% of AFC times the number of years of creditable service.
Appointed officials	2.5% of AFC times the number of years of creditable service.
Elected officials	5.0% of AFC times the number of years of creditable service. Any Council member who elects to be member of the retirement system on or after February 1, 2010 may not receive a retirement allowance in excess of 60% of the member's AFC.
Firefighters	2.5% of AFC times the number of years of creditable service up to 20 years, plus 2.0% of AFC for each year of creditable service in excess of 20 years, and 3.0% of AFC for each year of creditable service in excess of 30 years, for service years on or after July 1, 2007. 2.0% of AFC times the number of years of creditable service – if less than 20 years of creditable service.
Correctional officers and Deputy sheriffs	2.5% of AFC times the number of years of creditable service up to 20 years, plus 2.0% of AFC times the number of years of creditable service in excess of 20 years. <u>If hired prior to July 1, 2007, and age 65 with at least 5, but less than 20 years of creditable service:</u> 1.82% of AFC times the number of years of creditable service. <u>If hired prior to July 1, 2007, and age 60 with less than 20 years of creditable service:</u> 1.82% of AFC times the number of years of creditable service earned prior to July 1, 2007, plus 1.43% of AFC times the number of years of creditable service earned after June 30, 2007. <u>If hired on or after July 1, 2007, with less than 25 years of creditable service at retirement:</u> 1.43% of AFC times the number of years of creditable service.
Police officers	2.5% of AFC times the number of years of creditable service up to 20 years, plus 2.0% of AFC for each year of creditable service in excess of 20 years, and 3.0% of AFC for each year of creditable service in excess of 25 years, for service years on or after July 1, 2007. 2.0% of AFC times the number of years of creditable service – if less than 20 years of creditable service.

## Notes to Financial Statements, continued

In addition to the maximum retirement allowance, members may select one of six retirement allowance options to provide payments to a beneficiary upon the death of a retired member. A selection of an option reduces the maximum allowance. Police officers and firefighters with at least 25 years of actual service as a sworn Baltimore County Police Officer or sworn Baltimore County Firefighter may select a 7<sup>th</sup> option that allows 50% of member's retirement to continue to the original beneficiary at no cost to the employee.

In accordance with Section 5-1-235 of the Code, each July 1, post-retirement allowance adjustments may be granted to retirees who have been retired for more than 60 months. Active members hired prior to July 1, 2007 and retire on or after July 1, 2010 must have at least 20 years of creditable service to be eligible for post-retirement COLAs. Active members hired on or after July 1, 2007 must have at least twenty five (25) years of creditable service to be eligible for post-retirement COLAs. For active members who select the DROP program, the eligibility period to receive COLAs in the DROP remains a minimum of 12 months. Once the member actually retires, the eligibility period for a post-retirement COLA is a minimum of 48 months. The post-retirement allowance adjustment is equal to the increase in the Consumer Price Index - All Urban Consumers (CPI-U) for the previous calendar year, in an amount not to exceed 3%, provided sufficient investment income in excess of valuation requirements has accumulated in the Post-Retirement Increase Fund Balance Account described in Note 2. The maximum Post-Retirement Increase Fund Account Balance is equal to twice the cost of a 3% COLA. Additional details regarding cost-of-living increases may be found in the Summary of Plan Provisions under the heading Post-Retirement Allowance Increases.

## 2. Summary of Significant Accounting Policies and Plan Asset Matters

*New Accounting Pronouncement - Governmental Accounting Standards Board (GASB) Statement No.82, Pensions Issues – an amendment of GASB Statement No. 67, No. 68 and no. 73.* This Statement addresses issues regarding:

(1) the presentation of payroll-related measures in required supplementary information, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contribution requirements. The System implemented the effects of Statement No. 82, as applicable, for the reporting period ending June 30, 2018 and 2017.

*Basis of Accounting* - The financial statements of the System are presented using the economic resource measurement focus and the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when due and a formal commitment to provide the contributions has been made. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

The System records investment purchases and sales on a trade-date basis. These transactions are not finalized until settlement date. Cash received as collateral on securities lending transactions and investments made with such cash are reported as assets along with a related liability for collateral received.

*Method Used To Value Investments* - Plan investments are reported at fair value. Securities traded on national or international exchanges are valued at the last reported sales price at current exchange rates. The fair value of real estate equity funds is based on independent appraisals. The fair value of mutual funds is based on the fair value of the underlying securities. Hedge Fund-of-Funds are valued based on information provided by the respective fund managers. The fair value for alternative investments which include private equity funds is based upon the partnership's most recent available financial information. For more information on fair value measurement, please refer to Note 4, Cash deposits, Investments and Securities Lending.

*Administrative Costs* - The System pays for the following administrative expenses: professional actuarial costs, pension consultant fees, data processing, medical board examinations, salaries, benefits, audit/legal fees, equipment and supplies, postage, printing and miscellaneous expenses. These administrative expenses are funded from employer contributions.

*Net Position Accounts* - As provided by the Code, all assets of the System must be credited according to the purpose for which they are held to the annuity savings fund, the pension accumulation fund or the post-retirement increase fund.

# FINANCIAL SECTION

## Notes to Financial Statements, continued

These funds are classified together as the net position held in trust for pension benefits for financial reporting purposes and are explained below:

*Annuity Savings Fund Balance Account* - This Account records the accumulated contributions credited to individual members' accounts together with the interest thereon. Upon termination of employment, accumulated contributions plus interest are refunded from this account. When a member retires, the member's accumulated contributions plus interest are transferred to the Pension Accumulation Fund Balance Account.

*Pension Accumulation Fund Balance Account* - This Account records all accumulated reserves used to pay member pensions, other benefits and administrative expenses. The reserves are accumulated from employer contributions, investment income, gains on sales of investments and amounts transferred from the Annuity Savings Fund Balance Account when a member retires.

*Post-Retirement Increase Fund Balance Account* - This Account records all investment earnings in excess of valuation requirements transferred from the Pension Accumulation Fund Balance Account in order to finance post-retirement allowance increases to retired members.

At June 30, 2018 and 2017, the balances in the legally required accounts are as follows:

	<b>FY 2018</b> (in Thousands)	<b>FY 2017</b> (in Thousands)
Annuity Savings Fund	\$593,375	\$572,264
Pension Accumulation Fund	2,183,748	2,104,692
Post-Retirement Increase Fund	10,526	10,526
Net Position Held in Trust for Pension Benefits	<u>\$2,787,649</u>	<u>\$2,687,482</u>

### 3. Contributions

System members contribute a percentage of their salary to the System determined by County Code. The contribution rates for members are based on employee classification. A chart of member contribution rates is provided in the Summary of Plan Provisions in the Actuarial Section of this report. The County and the participating employers intend to fund the System according to the actuarially determined employer contributions (ADEC). The ADEC is equal to the normal cost plus amortization of the unfunded actuarial accrued liability. The employer contributions to the System consist of the System's share of the normal cost plus an amount needed to accomplish 30-year amortization of the unfunded accrued liability, with each year's net change in the unfunded liability amortized over a separate, closed 30-year period. As of July 1, 2015, the plan's unfunded actuarial liability was restarted on a 30 year payment schedule. The employer contributions to the System are equal to 100% of the ADEC. Per Section 5-1-203 of the Code, contribution requirements of the plan members and the participating employers are established and may be amended by the Board.

### 4. Cash Deposits, Investments and Securities Lending

*Custodial Credit Risk* - For Cash Deposits, Investments and Securities Lending, custodial credit risk is the risk that, in the event of the failure of the bank or counterparty, the System will not be able to recover the deposits, value of its investments or collateral securities that are in possession of an outside party. The System cash deposits are fully covered by FDIC insurance and/or collateral pledged to the System's account held by the System's agent in the System's name at year-end. The collateral pledged and held consists of obligations issued by the U.S. government and agencies.

Investment securities are registered in the name of the System. As of June 30, 2018, and 2017 the carrying amount of cash was \$8.3 million and (\$7.6) million, respectively.

# FINANCIAL SECTION

## Notes to Financial Statements, continued

*Investment Policy* - Pursuant to Section 5-1-247 of the Baltimore County Code, the Board of Trustees utilizes the “prudent person” standard for managing the assets of the System. The Board has established the following policies:

- 1) Assure that the System’s investment policy has been designed to provide broad diversification among asset classes in order to maximize return at an appropriate level of risk and minimize the risk of large losses to the System.
- 2) Employ a diversity of investment managers with different investment styles on how to obtain their investment objective.
- 3) Closely monitor the performance of all investment managers not only in relation to specific objectives, but also in relation to other fund managers following the same investment objectives.

The System is currently invested in stocks (domestic and foreign), fixed income securities, private equity funds, real estate funds, and global asset allocation funds. During FY 2016, the Board phased out the allocations to hedge fund-of-funds and eliminated the allocation of real assets. The Code provides for full power to hold, purchase, sell, assign, transfer and dispose of any of the securities and investments in any of the System’s funds.

For the year ended June 30, 2018, the System has operated in all material respects in accordance with the System’s investment policy.

The System’s investment policy as of June 30, 2018, is shown below for the broad investment categories:

<i>Asset Class</i>	<i>Allocation Target</i>	<i>Allocation Range</i>
<i>U. S. Equities</i>	<i>24%</i>	<i>19 - 29%</i>
<i>International Equities</i>	<i>25%</i>	<i>20 - 30%</i>
<i>Private Equities</i>	<i>7%</i>	<i>0 - 9%</i>
<i>Fixed Income</i>	<i>24%</i>	<i>19 - 29%</i>
<i>Real Estate</i>	<i>5%</i>	<i>0 - 7%</i>
<i>Global Asset Allocation</i>	<i>15%</i>	<i>10 - 20%</i>
<i>Cash and Cash equivalents</i>	<i>0%</i>	<i>0 - 5%</i>
<b><i>Total</i></b>	<b><i><u>100%</u></i></b>	

*Rate of Return* - For the years ended June 30, 2018 and 2017, the annual time-weighted rate of return on pension plan investments, net of pension plan investment expense, was 7.6% and 13.6%, respectively. The time-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

*Interest Rate Risk* - The investment policy guidelines of the Employees’ Retirement System of Baltimore County do not specifically address limits on maturities as a means of managing its exposure to fair value losses arising from changing interest rates. The manager of each fixed income portfolio is responsible for determining the average maturity of their portfolio. The following is a maturity schedule of the System’s fixed income investments of bonds and short term investments as of June 30, 2018 and 2017.

# FINANCIAL SECTION

## Notes to Financial Statements, continued

### Investment Maturities (in Years)

**FY 2018**

*(Expressed in Thousands)*

Investment Type	Fair Value	Less than 1	1 - 4.9	5 - 9.9	10-19.9	20-30	More Than 30
U.S. Govt. Obligations	\$ 59,977	\$ 8,351	\$ 13,188	\$ 22,061	\$ 2,037	\$ 14,222	\$ 118
U.S. Agency Securities	34,223	11,591	8,884	5,120	2,398	5,317	913
Corporate debt	95,761	24,570	46,841	6,401	3,032	9,487	5,430
Bond Mutual Funds	441,714	-	-	441,714	-	-	-
Foreign debt	27,466	13,025	7,909	3,731	1,165	1,330	306
Total	\$ 659,141	\$ 57,537	\$ 76,822	\$ 479,027	\$ 8,632	\$ 30,356	\$ 6,767

### Investment Maturities (in Years)

**FY 2017**

*(Expressed in Thousands)*

Investment Type	Fair Value	Less than 1	1 - 4.9	5 - 9.9	10-19.9	20-30	More Than 30
U.S. Govt. Obligations	\$ 53,884	\$ 2,873	\$ 11,228	\$ 12,661	\$ 2,439	\$ 21,140	\$ 3,543
U.S. Agency Securities	78,622	9,138	12,889	22,308	14,726	11,282	8,279
Municipals debt	2,083	-	-	-	329	1,754	-
Corporate debt	119,705	26,713	55,560	16,057	4,738	7,964	8,673
Bond Mutual Funds	383,584	-	83,253	300,331	-	-	-
Foreign debt	6,281	4,085	556	568	223	796	53
Total	\$ 644,159	\$ 42,809	\$ 163,486	\$ 351,925	\$ 22,455	\$ 42,936	\$ 20,548

*Credit Risk* - The System's investment policy is to apply the prudent-person rule: Investments are made as a prudent person would be expected to act with discretion and intelligence, to seek reasonable income, preserve capital and in general, avoid speculative investments. Investments in high yield securities are limited to 20% in the guidelines for core plus fixed income manager Western Asset Management, and 15% for Reams Asset Management. PIMCO Diversified Fixed Income Fund target 1/3 of their portfolio in high yield securities. Loomis Sayles Strategic Alpha Trust has long/short exposure in net non-investment grade securities of +/- 50%. Stone Harbor may invest up to 100% of their portfolio in high yield securities.

# FINANCIAL SECTION

## Notes to Financial Statements, continued

As of June 30, 2018 and 2017, the System's fixed income investments had the following credit risk characteristics:

	FY 2018			FY 2017	
Moody's Ratings or Comparable	Fair Value (in Thousands)	Percent of Fixed Income Investments		Fair Value (in Thousands)	Percent of Fixed Income Investments
AAA	\$ 97,430	14.8%		\$ 146,478	22.7%
AA	8,948	1.4		9,278	1.5
A	45,697	6.9		43,357	6.7
BBB	31,913	4.8		40,046	6.2
BB	6,285	1.0		4,566	0.7
B	652	0.1		1,213	0.2
CCC	803	0.1		993	0.2
CC	1,418	0.2		1,410	0.2
NR*	<u>465,995</u>	70.7		<u>396,818</u>	61.6
<b>Total</b>	<u><b>\$ 659,141</b></u>	100.0%		<u><b>\$ 644,159</b></u>	100.0%

\*NR represents securities not rated, primarily made up of swaps and commingled funds, which by their nature do not have credit quality ratings.

*Investments in Excess of 5% of the Net Position Held in Trust for Pension Benefits* - The System had no individual investments at fair value in excess of 5% of the System's net position held in trust for pension benefits as of June 30, 2018 and 2017.

### Derivative Policy:

As permitted by guidelines established by the Board of Trustees the System may invest in Derivatives.

A derivative is a security or contractual agreement, which derives its value from some underlying security, commodity, currency, or index.

1. Types of derivative contracts
  - a. Forward-based derivatives, including forward contracts, futures contracts, swaps, and similar instruments, and
  - b. Option-based derivatives, including put options, call options, interest rate caps and floors, and similar instruments.
2. Types of Derivative Securities
  - a. Collateralized Mortgage Obligations (CMOs)
  - b. Structured Notes
3. Domestic Debt Securities are permitted and may include U.S. Government and Agency obligations, corporate bonds, asset backed securities, agency guaranteed mortgage pass-through securities and low risk collateralized mortgage obligations of comparable or lower risk, such as Planned Amortizations Class Level 1 and sequentials, commercial paper, and certificates of deposit. Managers may also invest in U.S. dollar denominated issues of international agencies, foreign governments and foreign corporations (i.e., Eurodollar and Yankee bonds).
4. Futures and Options strategies may be employed, upon specific authorization of the Board, on equity and fixed income investments to provide volatility protection or enhance the rate of return over time.

# FINANCIAL SECTION

## Notes to Financial Statements, continued

5. Where appropriate, managers may use derivative contracts for the following reasons:
  - a. Hedging. To the extent that the portfolio is exposed to clearly defined risks and there are derivative contracts that can be used to reduce those risks, the investment managers are permitted to use such derivatives for hedging purposes, including cross hedging of currency exposures.
  - b. Creation of Market Exposures. Managers are permitted to use derivatives to replicate the risk/return profile of an asset or asset class provided that the guidelines for the Manager allow for such exposures to be created with the underlying assets themselves.
  
6. The following two uses of derivative contracts and securities are strictly prohibited:
  - a. Leverage. Derivatives shall not be used to magnify overall portfolio exposure to an asset, asset class, interest rate, or any other financial variable beyond that which would be allowed by a portfolio's investment guidelines if derivatives were not used.
  - b. Unrelated speculation. Derivatives shall not be used to create exposures to securities, currencies, indices, or any other financial variable unless such exposures would be allowed by a portfolio's investment guidelines if created with non-derivative securities.

The System utilizes certain derivative instruments for the purpose of obtaining income or profit. The derivatives are subject to credit risks, interest rate risk, and foreign currency risk. Classified and aggregated by type, the fair value balances and notional amounts of derivative instruments outstanding at June 30, 2018 and 2017, and the changes in fair value of such derivative instruments for the year then ended are as follows:

	Changes in Fair Value		Fair Value as of June 30, 2018	
	(in Thousands)		(in Thousands)	
<b><u>Investment Derivatives:</u></b>	<b><u>Classification</u></b>	<b><u>Amount</u></b>	<b><u>Amount</u></b>	<b><u>Notional Value</u></b>
Futures	Investment Revenue	\$ -	\$ 30	\$43,658
Options	Investment Revenue	(4)	(27)	(705)
Swaps	Investment Revenue	(24)	(36)	8,109
TBA Transactions	Investment Revenue	38	10,819	10,819

	Changes in Fair Value		Fair Value as of June 30, 2017	
	(in Thousands)		(in Thousands)	
<b><u>Investment Derivatives:</u></b>	<b><u>Classification</u></b>	<b><u>Amount</u></b>	<b><u>Amount</u></b>	<b><u>Notional Value</u></b>
Futures	Investment Revenue	\$ -	(\$ 8)	\$ 13,858
Options	Investment Revenue	62	62	(6,397)
Swaps	Investment Revenue	175	202	(6,352)
Mortgage Derivatives	Investment Revenue	(182)	800	800
TBA Transactions	Investment Revenue	(45)	10,127	10,127



# FINANCIAL SECTION

## Notes to Financial Statements, continued

*Foreign Currency Risk* - The System's exposure to foreign currency risk is derived from its positions in foreign currency-denominated common stock and fixed income investments. Managers are allowed to use derivatives to hedge out foreign currency; however, there is no formal policy regarding foreign currency risk. The Systems exposure to foreign currency risk as of June 30, 2018 and 2017 is as follows:

Currency	FY 2018 Fair Value (in Thousands)	FY 2017 Fair Value (in Thousands)
Australian Dollar	\$ 8,340	\$ 7,445
Brazil Real	389	707
Canadian Dollar	1,941	1,995
Danish Krone	3,557	4,294
Euro Currency Unit	81,742	76,639
Hong Kong Dollar	16,464	13,199
Israeli Shekel	740	817
Japanese Yen	58,752	51,319
New Taiwan Dollar	1,542	1,577
New Zealand Dollar	218	346
Norwegian Krone	1,942	1,408
Polish Zloty	275	-
Pound Sterling	26,639	22,341
Singapore Dollar	3,734	3,614
South African Rand	774	247
South Korean Won	8,310	7,502
Swedish Krona	6,308	4,742
Swiss Franc	9,851	14,372
Thailand Baht	242	275
Turkish Lira	232	642
Total	<u>\$ 231,992</u>	<u>\$ 213,481</u>

*Securities Lending Transactions* - The Board's policies permit the System to lend its securities to broker-dealers and other entities with a simultaneous agreement to return the collateral for the same securities in the future. The System's custodian lends U.S. government and agency securities, corporate bonds and stocks for collateral in the form of cash, other securities and irrevocable bank letters of credit. Collateral securities, letters of credit and cash are initially pledged at 102% of the fair value of the securities lent. Additional collateral is to be provided by the next business day if the collateral value falls to less than 100% of the fair value of the securities lent. The System did not impose any restrictions during the fiscal year on security loans the custodian made on its behalf. At June 30, 2018, the System had no credit risk exposure to borrowers because the amounts the System owes the borrowers exceed the amounts the borrowers owe the System. The relationship between the maturities of the investment pool and the System's loans is affected by the maturities of the security loans made by other entities that use the agent's pool, which the System cannot determine. The System cannot pledge or sell collateral securities received unless the borrower defaults. All securities loans can be terminated on demand by either the System or the borrower. Cash collateral is invested in both a separately managed fixed income account and a cash collateral pool, which at year-end had a weighted-average maturity of 2 days. The collateral held as of June 30, 2018 and 2017 was \$114.4 million and \$64.7 million, respectively. The fair value of securities on loan as of June 30, 2018 and 2017 totaled \$111.9 million and \$63.3 million, respectively.



# FINANCIAL SECTION

## Notes to Financial Statements, continued

The following tables present the fair value of the underlying securities, and the value of the collateral pledged at June 30, 2018 and 2017 (in thousands):

<b>FY 2018</b> Securities Lent for:	Fair Value of Loaned Securities	Collateral Fair Value	Percent Collateralized
Cash Collateral	\$18,645	\$19,308	103.56%
Non-Cash Collateral	<u>93,262</u>	<u>95,122</u>	101.99%
Total	<u>\$111,907</u>	<u>\$114,430</u>	102.26%

<b>FY 2017</b> Securities Lent for:	Fair Value of Loaned Securities	Collateral Fair Value	Percent Collateralized
Cash Collateral	\$21,253	\$21,875	102.92%
Non-Cash Collateral	<u>42,015</u>	<u>42,803</u>	101.88%
Total	<u>\$63,268</u>	<u>\$64,678</u>	102.23%

**Fair Value Measurement** - Investments measured and reported at fair value are classified according to the following hierarchy:

Level 1 – Investments reflect quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 – Investments reflect prices (other than quoted prices) that are observable for the asset or liability, whether directly or indirectly, which may include inputs in markets that are not considered to be active.

Level 3 – Investments reflect prices based upon unobservable sources, when there is little, if any market activity.

The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument and should not be perceived as the particular investment's risk.

Debt, equities, and investment derivatives classified in Level 1 of the fair value hierarchy are valued based on prices quoted in active markets for those securities, such as the New York Stock Exchange or the Nasdaq stock market. Investments classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique, which is based on the securities' relationship to benchmark quoted prices. Derivative instruments classified in Level 2 of the fair value hierarchy are valued using a market approach that considers benchmark interest rates and foreign exchange rates. Securities classified in Level 3 of the fair value hierarchy, are valued using unobservable inputs for the asset or liability.

# FINANCIAL SECTION

## Notes to Financial Statements, continued Investment Valuation - June 30, 2018 (Expressed in thousands)

The following table presents the System's recurring fair value measurements as of June 30, 2018.

### INVESTMENT VALUATION - THE SYSTEM

	Fair Value Measurement Using			
	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	
Investments by Fair Value Level	Fair Value			
Debt Securities:				
U.S. Government Obligations	\$ 56,980	\$ 53,720	\$ 3,260	\$ -
U.S. Securities and Agencies	26,365	-	26,365	-
Municipal debt	-	-	-	-
Corporate debt	95,707	-	95,707	-
Foreign debt	27,589	-	16,317	11,272
Total Debt Securities	206,641	53,720	141,649	11,272
Equity Securities:				
Domestic	327,184	327,184	-	-
International	233,187	233,187	-	-
Total Equity Securities:	560,371	560,371	-	-
Securities Lending Cash Collateral	19,308	-	19,308	-
Investments Derivative Instruments:				
Futures	\$ 30	\$ 30	\$ -	\$ -
Options	(27)	(26)	(1)	-
Swaps	(36)	-	(36)	-
TBAs	10,819	-	10,819	-
Total Investments Derivative Instruments	\$ 10,786	\$ 4	\$ 10,782	\$ -
Total Investments by Fair Value Level	\$ 797,106	\$ 614,095	\$ 171,739	\$ 11,272
Investments Measured at the Net Asset Value (NAV):				
Commingled Fixed Income Funds	\$ 441,714			
Commingled Domestic Equity	393,839			
Commingled International Equity	435,831			
Real Estate Funds	153,922			
Hedge Fund of Funds	265			
Private Equity Funds	134,139			
Global Asset Allocation	429,463			
Total Investments Measured at the NAV	\$ 1,989,173			
Total Investments and Collateral for Loaned Securities	\$ 2,786,279			

# FINANCIAL SECTION

## Investment Valuation - June 30, 2017 (expressed in thousands)

The following table presents the System's recurring fair value measurements as of June 30, 2017.

<u>INVESTMENT VALUATION - THE SYSTEM</u>				
		Fair Value Measurement Using		
		Active Markets for Identical Assets Level 1	Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
<u>Investments by Fair Value Level</u>		Fair Value		
<b>Debt Securities:</b>				
U.S. Government Obligations	\$ 51,788	\$ 41,910	\$ 9,878	\$ -
U.S. Securities and Agencies	69,927	769	69,158	-
Municipal debt	2,083	-	2,083	-
Corporate bonds	119,578	-	112,949	6,629
Foreign debt	6,016	-	1,933	4,083
Total Debt Securities	249,392	42,679	196,001	10,712
<b>Equity Securities:</b>				
Domestic	331,036	331,036	-	-
International	214,437	214,437	-	-
Total Equity Securities:	545,473	545,473	-	-
Security Lending Cash Collateral	21,875	-	21,875	-
<b>Investments Derivative Instruments:</b>				
Futures	\$ (8)	\$ (8)	\$ -	\$ -
Options	62	62	-	-
Swaps	202	-	202	-
Mortgage Derivatives	800	-	800	-
TBAs	10,127	-	10,127	-
Total Investments Derivative Instruments	\$ 11,183	\$ 54	\$ 11,129	\$ -
Total Investments by Fair Value Level	\$ 827,923	\$ 588,206	\$ 229,005	\$ 10,712
<b>Investments Measured at the Net Asset Value (NAV):</b>				
Commingled Fixed Income Funds	\$ 383,584			
Commingled Domestic Equity	430,530			
Commingled International Equity	397,205			
Real Estate Funds	139,719			
Hedge Fund of Funds	719			
Private Equity Funds	119,348			
Global Asset Allocation	400,768			
Total Investments Measured at the NAV	\$ 1,871,873			
Total Investments and Collateral for Loaned Securities	\$ 2,699,796			

# FINANCIAL SECTION

## Notes to Financial Statements, continued

### Investments in Entities That Calculate Net Asset Value Per Share

The fair values of investments in certain equity, fixed income, and marketable alternatives funds are based on the investments' net asset value (NAV) per share (or its equivalent) of the System's ownership interest in the partners' capital provided by the investee. The fair values of investments in certain private equity funds have been determined using recent observable transaction information for similar investments and nonbinding bids received from potential buyers of the investments. The following table presents the System's unfunded commitments, redemption terms and investments measured at the NAV as of June 30, 2018.

Investments Measured at the NAV (expressed in thousands)	Fair Value	Strategy Type	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Loomis Sayes Strategic Alpha	\$ 87,366	Absolute Return	-	Semi-monthly	15 days
Pimco Diversified Income	168,335	Global, High Yield, Emg. Mkt.	-	Daily	1 day
Stone Harbor Local Market	104,660	Emerging Market Debt	-	Daily	1 day
Guggenheim Investments	48,764	Bank Loans	-	Monthly	21 days
Pacific Asset Management	32,589	Bank Loans	-	Monthly	30 days
(a) Commingled Fixed Income Funds	<u>441,714</u>				
Benchmark	37,738	Portable Alpha	-	Annually	90 days
Blackrock US Equity	356,101	Wilshire 5000 Index	-	Daily	3 days
(b) Commingled Domestic Equity	<u>393,839</u>				
Blackrock ACWI Ex-US	163,932	All Country World Ex US Index	-	Daily	5 days
Mondrian Emerging Markets	237,381	Emerging Market Equity	-	Monthly	15 days
Strategic Global Advisors	34,518	MSCI World Ex USA Small Cap			
(c) Commingled International Equity	<u>435,831</u>				
Aslan Realty Partners	54	Opportunistic Real Estate	-	N/A	N/A
JP Morgan	45,958	Value Added Real Estate	-	Monthly	15 days
Clarion Lion	54,531	Core Real Estate	-	Quarterly	90 days
UBS Real Estate	53,379	Core Real Estate	-	Quarterly	60 days
(d) Real Estate Funds	<u>153,922</u>				
EIM Management Alternative	205	Hedge Fund-of-Funds	-	Monthly	30 days
Federal Street Offshore	60	Hedge Fund-of-Funds	-	Quarterly	65 days
(e) Hedge Fund of Funds	<u>265</u>				
(f) Private Equity Funds	<u>134,139</u>	Private Equity	\$147,665	N/A	N/A
Bridgewater All Weather	147,584	Risk Parity	-	Monthly	5 days
Mellon EB DV Global Alpha 1	126,842	Global Asset Allocation	-	Daily	3 days
Wellington Opportunistic	155,037	Global Asset Allocation	-	Monthly	30 days
(g) Global Asset Allocation	<u>429,463</u>				
Total Investments Measured at NAV	<u><u>\$1,989,173</u></u>				

# FINANCIAL SECTION

## Notes to Financial Statements, continued

The following table presents the System's unfunded commitments, redemption terms and investments measured at the NAV as of June 30, 2017.

Investments Measured at the NAV (expressed in thousands)	Fair Value	Strategy Type	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Loomis Sayes Strategic Alpha	\$ 83,253	Absolute Return	-	Semi-monthly	15 days
Loomis Sayes Credit Asset	29,867	High Yield Debt	-	Semi-monthly	15 days
Pimco Diversified Income	162,811	Global, High Yield, Emg. Mkt.	-	Daily	1 day
Stone Harbor Local Market	107,653	Emerging Market Debt	-	Daily	1 day
(a) Commingled Fixed Income Funds	<u>383,584</u>				
Benchmark	35,783	Portable Alpha	-	Annually	90 days
Blackrock US Equity	394,747	Wilshire 5000 Index	-	Daily	3 days
(b) Commingled Domestic Equity	<u>430,530</u>				
Blackrock ACWI Ex-US	120,158	All Country World Ex US Index	-	Daily	5 days
Mondrian Emerging Markets	246,714	Emerging Market Equity	-	Monthly	15 days
Strategic Global Advisors	30,333	MSCI World ex USA Small Cap	-	Daily	5 days
(c) Commingled Intl. Equity	<u>397,205</u>				
Aslan Realty Partners	135	Opportunistic Real Estate	-	N/A	N/A
JP Morgan	41,180	Value Added Real Estate	-	Monthly	15 days
Clarion Lion	49,272	Core Real Estate	-	Quarterly	90 days
UBS Real Estate	49,132	Core Real Estate	-	Quarterly	60 days
(d) Real Estate Funds	<u>139,719</u>				
EIM Management Alternative	555	Hedge Fund-of-Funds	-	Monthly	30 days
Federal Street Offshore	164	Hedge Fund-of-Funds	-	Quarterly	65 days
(e) Hedge Fund of Funds	<u>719</u>				
(f) Private Equity Funds	119,348	Private Equity	\$62,449	N/A	N/A
Bridgewater All Weather	134,950	Risk Parity	-	Monthly	5 days
Mellon EB DV Global Alpha 1	119,874	Global Asset Allocation	-	Daily	3 days
Wellington Opportunistic Fund	145,944	Global Asset Allocation	-	Monthly	30 days
(g) Global Asset Allocation	<u>400,768</u>				
Total Investments Measured at NAV	<u><u>\$ 1,871,873</u></u>				

## Notes to Financial Statements, continued

Investments measured at the NAV above comprise of the following:

- (a) **Commingled Fixed Income Funds** – These include investments in five funds, utilizing a variety of strategies which include Absolute Return; High Yield Debt; Bank Loans and Emerging Market Debt. The redemption notice period for two of the funds is one day, and for the other three funds fifteen, twenty one and thirty days. Two of the funds may be redeemed daily, one fund may be redeemed semi-monthly, and the other two funds may be redeemed monthly. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.
- (b) **Commingled Domestic Equity Funds** – These include two funds with investments in U.S. common stocks. The strategy type employed are Portable Alpha and the Wilshire 5000 index. The fund utilizing the Portable Alpha strategy may only be redeemed annually with a redemption notice period of ninety days. The fund utilizing the Wilshire 5000 index strategy may be redeemed daily with a redemption notice period of three days. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.
- (c) **Commingled International Equity Funds** – These include three funds. One of the funds utilizes the All Country World Ex-US Index, with a daily redemption frequency and a redemption notice period of five days. The second fund utilizes an Emerging Market Equity strategy with a monthly redemption frequency and a redemption notice period of fifteen days. The third fund utilizes the MSCI World EX USA Small Cap index strategy with a daily redemption frequency and a redemption notice period of five days. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.
- (d) **Real Estate Funds** – This includes investments in four funds in U.S. commercial real estate. The fund utilizing the Opportunistic Real Estate strategy is a closed fund. It is currently in liquidation. The strategy type for two of these funds is Core Real Estate and the fourth fund employs a Value Added Real Estate strategy. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.
- (e) **Hedge Fund-of-Funds** – There are two funds invested in Hedge Fund of Funds. These funds are in liquidation. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.
- (f) **Private Equity Funds** – These investments are not publicly traded on a stock exchange. The investment consists of thirty-eight private equity funds in FY2018 and thirty-seven private equity funds in FY2017. The outstanding commitments were \$147,665,000 and \$62,449,000 in FY 2018 and FY 2017, respectively. These investments cannot be redeemed with the funds. Instead, the nature of the investments in this type is that distributions are received through the liquidation of the underlying assets of the fund. If these investments were held, it is expected that the underlying assets of the fund would be generally liquidated over ten years. The fair values of the investments in these private equity funds have been determined using the NAV per share (or equivalent) of the primary government's ownership interest in partners' capital.

## Notes to Financial Statements, continued

- (g) Global Asset Allocation – This investment type includes three funds. One fund utilizes the Risk Parity strategy, and the other two funds employ a Global Tactical Asset Allocation strategy. The strategy is employed to balance risk by investing in a variety of asset classes through active management. Funds may be invested in global equities, bonds and commodities. One fund allows daily redemptions with a redemption notice period of three days. The other two funds allow only monthly redemptions. The redemption period is five and thirty days, respectively. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.

### 5. Risk Management

The County bears any risk of loss related to the System (e.g. torts, theft of, damage to, or destruction of assets; errors or omissions, job-related illnesses, or injuries to employees; and natural disasters). The County manages its risks internally and sets aside assets for claims settlement in an internal service fund.

### 6. Litigation

There is a significant outstanding claim against Baltimore County that has the potential to impact members' contributions to the Employees' Retirement System of Baltimore County. The U.S. Equal Employment Opportunity Commission (EEOC) has sued Baltimore County and six (6) County Unions claiming that they violated the Age Discrimination in Employment Act (ADEA) by requiring employees who join the retirement system as older workers to contribute more than workers who joined at a younger age. The United States District Court for the District of Maryland granted Baltimore County's Motion for Summary Judgment on January 21, 2009. The Fourth Circuit Court of Appeals reversed and remanded the case to the District Court. By Order entered on October 17, 2012, the District Court reversed itself and found the County liable for age discrimination. After the District Court granted the County permission to file an interlocutory appeal, the Fourth Circuit affirmed the liability determination of the District Court on March 31, 2014. The Supreme Court denied the County's Petition for Writ of Certiorari on November 3, 2014 and the case has been remanded to the District Court for a determination of damages. The County filed a separate action in federal court seeking a declaration that its long-term actuary, Buck Consultants, LLC (Buck), is contractually obligated to defend, indemnify and hold the County harmless in the underlying EEOC action. On March 29, 2016, the District Court granted Buck's Motion to Dismiss the claim for indemnification and hold harmless, but denied it as to Buck's duty to defend the County. On May 5, 2016, the District Court stayed the declaratory action for six (6) months. In addition, the County filed in the underlying EEOC action a Motion for Leave to file a third-party complaint against Buck for common law indemnification and contribution in that action. Before the District Court ruled on that motion, the County and Buck filed a Stipulation and Order dismissing the Buck case and terminating all other possible actions regarding this matter, which was signed by the District Court on October 13, 2016. On April 27, 2016, the Court entered a Joint Consent Order Regarding Injunctive Relief, which resolved EEOC's claim for injunctive relief. On that same day, the Court ordered the parties to submit briefs on the question of whether EEOC was entitled to any retroactive or prospective damages for claimed "excess contributions" by older members. The Court conducted a hearing on July 29, 2016 to determine that issue. EEOC's claim for "excess contributions" by older workers was previously estimated to be \$17 million to \$19 million. On August 24, 2016, the Court issued an order denying EEOC's Motion for Determination on Availability of Retroactive and Prospective Monetary Relief for the "excess contributions," and held specifically that "[n]either retroactive nor prospective monetary relief is available in this case," and closed the case. The EEOC filed an appeal from the order to the United States Court of Appeals for the Fourth Circuit and oral argument was heard on October 26, 2017. On September 19, 2018, the Court issued a published Per Curiam Opinion vacating the opinion of the District Court and remanding the case "for a determination of the amount of back pay to which the affected employees are entitled under the ADEA." On December 13, 2018, the County filed a petition for writ of certiorari requesting the Supreme Court of the United States to review the Fourth Circuit's decision.

## Notes to Financial Statements, continued

### 6. Litigation, continued

There is a class action case brought by current and former employees who claim that the County miscalculated their pension benefits. Plaintiffs are all former state employees who transferred their time in the state system over to the County's pension system when they came to work with Baltimore County. The dispute is over an interpretation of Maryland state law concerning the interest rate the County was allowed to use when calculating the proper reduction in benefits these employees will get because they did not contribute to the County's pension system in the years they were working for the state. All of the Baltimore County Circuit Court judges recused themselves from hearing this case and it was transferred to Harford County, Maryland. The parties are currently attempting to agree on the definition of who the class or classes of plaintiffs will be. The case will then be briefed by both sides and it is anticipated that the court will then make a ruling on what the proper calculation and methodology should be and damages, if any, will be calculated at that point. It is believed that over 100 current and former employees may be included in the class so aggregate damages of several million dollars are reasonably possible.

### 7. Deferred Retirement Option Program (DROP)

Effective July 1, 2007, General employees hired prior to July 1, 2007, are offered a Forward DROP. The DROP allows eligible general employees to elect to receive a lump sum payment at retirement in exchange for a reduced monthly benefit. The DROP period is a minimum of 5 years and a maximum of 10 years. Eligibility is age 55 plus a total of age and service of at least 85. The DROP account will include benefit payments at the maximum option, employee contributions, an interest credit of 5%, plus any cost of living increase granted to retirees, provided the member has been in the DROP for at least 12 months. As of June 30, 2018 and 2017, the balance of the System's DROP allowance for General employees was \$34.4 and \$31.7 million, respectively, and DROP payables were \$3.3 and \$4.4 million, respectively.

### 8. Net pension Liability of the System

The components of the net pension liability as of June 30, 2018, were (in thousands):

Components of Net Pension Liability	Plan A	Plan B	Total
Total pension liability	\$4,429,211	\$149,684	\$4,578,895
The Plan's fiduciary net position	<u>(2,682,580)</u>	<u>(105,069)</u>	<u>(2,787,649)</u>
The Plan's net pension liability	<u>\$1,746,631</u>	<u>\$ 44,615</u>	<u>\$1,791,246</u>
The Plan's net position as a percentage of the total pension liability	60.57%	70.19%	60.88%

The components of the net pension liability as of June 30, 2017, were (in thousands):

Components of Net Pension Liability	Plan A	Plan B	Total
Total pension liability	\$4,259,294	\$113,167	\$4,372,461
The Plan's fiduciary net position	<u>(2,608,407)</u>	<u>(79,075)</u>	<u>(2,687,482)</u>
The Plan's net pension liability	<u>\$1,650,887</u>	<u>\$ 34,092</u>	<u>\$1,684,979</u>
The Plan's net position as a percentage of the total pension liability	61.24%	69.87%	61.46%



# FINANCIAL SECTION

## Notes to Financial Statements, continued

### Actuarial Assumptions

The total pension liability is based on a January 1, 2018 actuarial valuation rolled forward to June 30, 2018; and the total pension liability as of June 30, 2017 was determined by an actuarial valuation as of June 30, 2016 and rolled forward to June 30, 2017 using the actuarial assumptions set forth below. These assumptions were applied to all periods included in the measurement. For GASB No. 67 purposes, the Post Retirement Increase Fund (PRIF) assets equal to \$10,526,113 for FY 2018 and FY 2017, respectively, were excluded from retiree and beneficiary liabilities but included in the Plan's fiduciary net position. (Detailed actuarial assumptions are set forth in the Actuarial Section of this report).

The last experience study dated January 31, 2014, covered the period July 1, 2006 through June 30, 2011. The experience investigation was prepared in accordance with Article 5-1-245 of the Baltimore County Code, which requires that the actuary periodically undertake an experience investigation into the mortality, service, and compensation experience of the members and retirees of the System.

**Investment Rate of Return:** For FY 2018 and FY 2017, the expected rate of investment return was 6.375% for each year, net of investment expense and gain sharing, and including inflation.

**Mortality:** For healthy participants and beneficiaries: For males 108% of the RP-2000 Combined Healthy male table projected to 2027 by Scale AA and for females 100% of the RP-2000 Combined Healthy female table projected to 2027 by Scale AA. For disabled members, RP-2000 Disabled Annuitant Tables projected to 2027 with Scale AA.

**Inflation:** 3.0% per annum

**Salary Increase:** Representative rates are as follows:

Age	Annual Rates of Salary Increase		
	Fiscal Year 2014 – Fiscal Year 2016		Fiscal Year 2017 and thereafter
	General Employees, Correctional Officers and Deputy Sheriffs	Police Officers and Firefighters	All Members
25	6.40%	6.55%	6.55%
30	4.90	5.05	5.05
35	3.90	4.05	4.05
40	3.40	3.55	3.55
45	2.90	3.05	3.05
50	2.40	2.55	3.00
55	1.90	2.30	3.00
60	1.90	2.30	3.00
65	1.90	2.30	3.00

# FINANCIAL SECTION

## Notes to Financial Statements, continued

The effect of these assumptions is illustrated by the following examples: When used in the valuation process, the age-based rates shown above produce an effective annual average increase of 4.1% over a 27-year career for a Police Officer or Firefighter hired at age 25, and 3.5% over a 30-year career for a General Employee hired at age 30.

**Marital Status:** For Firefighters and Police Officers, 90% of active members are assumed to be married. For all other employees, 90% of active males and 50% of active females are assumed to be married. In all cases, it is assumed that the male spouse is 3 years older than the female spouse.

**Credit for Unused Sick Leave:** For members entitled to receive credit for unused sick leave, it was assumed that each member will accumulate such credit as follows:

Supervisory, management and confidential (SMC) members, other than firefighters	¾ year
Firefighters including SMC members	1 year
Employees other than Police Officers and Firefighters, excluding SMC members	½ year
Police Officers	½ year

**Long-term expected rate of return.** The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2018, and 2017 are summarized in the table below:

**Schedule of Long-term Expected Real Rate of Return**

	FY 2018			FY 2017	
Asset Class	Long-Term Expected Real Rate of Return	Target Asset Allocation		Long-Term Expected Real Rate of Return	Target Asset Allocation
Cash	0.00%	0.00%		0.25%	0.00%
Large Cap Equities	4.75	17.00		4.75	19.00
Small/Mid Cap Equities	5.00	7.00		5.00	8.00
International Equities (Unhedged)	5.00	16.00		5.00	13.00
Emerging International Equities	6.50	9.00		6.75	9.00
Core Bonds	1.00	8.00		1.25	8.00
Bank Loans	2.75	3.00		3.25	3.00
EMD (Local Currency)	3.75	4.00		3.75	4.00
Diversified Fixed Income	2.33	9.00		2.65	9.00
Private Equity	6.75	7.00		6.75	7.00
Real Estate (Core)	3.75	5.00		3.75	5.00
Global Asset Allocation	3.44	10.00		4.35	10.00
Risk Parity	4.01	5.00		3.43	5.00

# FINANCIAL SECTION

## Notes to Financial Statements, continued

**Discount rate.** The discount rate used to measure the total pension liability was the funding valuation interest rate of 6.375% as of June 30, 2018 and 2017, respectively. The projection of cash flow used to determine the discount rate assumed that employer contributions will continue to follow the current funding policy. Based on those assumptions, the System's fiduciary net position was projected to make all future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability, in accordance with the method prescribed by GASB Statement No. 67/68. We believe this assumption is reasonable for the purposes of the measurements required by the Statement. In the event of benefit payments not covered by the System's fiduciary net position, a municipal bond rate of 2.98% and 3.13% for FY 2018 and FY 2017, respectively, would be used to discount the benefit payments not covered by the System's fiduciary net position. The 2.98% and 3.13% rate equals the S&P Municipal Bond 20-Year High Grade Rate index at June 30, 2018 and 2017, respectively.

**Sensitivity of the net pension liability to changes in the discount rate for FY 2018.** The following schedule presents the net pension liability, calculated using the discount rate of 6.375%, as well as what the System's net liability would be if it were calculated using a discount rate that is 1 percentage point lower (5.375%) or 1 percentage point higher (7.375%) than the current rate (in thousands):

FY 2018 Net Pension Liability	1.00% Decrease (5.375%)	Current Discount Rate (6.375%)	1.00% Increase (7.375%)
Plan A - Net Pension Liability	\$2,263,017	\$1,746,631	\$1,310,931
Plan B - Net Pension Liability	<u>\$75,126</u>	<u>\$44,615</u>	<u>\$20,564</u>
Total	<u>\$2,338,143</u>	<u>\$1,791,246</u>	<u>\$1,331,495</u>

**Sensitivity of the net pension liability to changes in the discount rate for FY 2017.** The following schedule presents the net pension liability, calculated using the discount rate of 6.375%, as well as what the System's net liability would be if it were calculated using a discount rate that is 1 percentage point lower (5.375%) or 1 percentage point higher (7.375%) than the current rate (in thousands):

FY 2017 Net Pension Liability	1.00% Decrease (5.375%)	Current Discount Rate (6.375%)	1.00% Increase (7.375%)
Plan A - Net Pension Liability	\$2,174,785	\$1,650,887	\$1,228,376
Plan B - Net Pension Liability	<u>\$57,129</u>	<u>\$34,092</u>	<u>\$15,970</u>
Total	<u>\$2,231,914</u>	<u>\$1,684,979</u>	<u>\$1,244,346</u>

# FINANCIAL SECTION

## Required Supplementary Information (Unaudited) Schedule of Changes in the Net Pension Liability and Related Ratios

### THE SYSTEM (in Thousands)

	FY 2018*	FY 2017*	FY 2016*	FY 2015*	FY 2014*
<b>Total pension liability</b>					
Service cost	\$ 110,061	\$ 103,827	\$ 94,108	\$ 88,642	\$ 60,588
Interest	276,797	257,478	262,189	258,266	251,154
Changes of benefit terms	-	-	-	-	-
Differences between expected and actual experience	105,206	43,948	(52,809)	71,738	-
Changes of assumptions	-	173,216	106,774	21,165	-
Benefit payments, including refunds of member contributions	(285,630)	(277,787)	(253,159)	(247,854)	(228,834)
Net change in total pension liability	206,434	300,682	157,103	191,957	82,908
Beginning total pension liability	4,372,461	4,071,779	3,914,676	3,722,719	3,639,811
Ending total pension liability: (a)	4,578,895	4,372,461	4,071,779	3,914,676	3,722,719
<b>Plan fiduciary net position</b>					
Employer contributions	128,896	118,155	105,742	108,191	80,453
Employee contributions	45,697	43,244	40,812	39,725	37,845
Net investment income	212,476	330,746	(26,404)	23,026	327,264
Benefit payments, including refunds of member contributions	(285,630)	(277,787)	(253,159)	(247,854)	(228,834)
Administrative expense	(1,272)	(2,393)	(1,647)	(1,681)	(1,342)
Other	-	150,000	-	-	-
Net change in plan fiduciary net position	100,167	361,965	(134,656)	(78,593)	215,386
Beginning plan fiduciary net position	2,687,482	2,325,517	2,460,173	2,538,766	2,323,380
Ending plan fiduciary net position: (b)	2,787,649	2,687,482	2,325,517	2,460,173	2,538,766
Plan's net pension liability - ending (a) - (b)	\$ 1,791,246	\$ 1,684,979	\$ 1,746,262	\$ 1,454,503	\$ 1,183,953
Plan fiduciary net position as a percentage of the total pension liability	60.88%	61.46%	57.11%	62.84%	68.20%
Covered payroll	\$ 572,829	\$ 569,281	\$ 540,702	\$ 519,380	\$ 509,899
System's net pension liability as a percentage of covered payroll	312.70%	295.98%	322.96%	280.05%	232.19%
Expected average remaining service years of all participants	6	6	6	6	6

\*Ten-year historical trend information is not available but will be compiled going forward.

Notes to the Schedule: *Changes of Assumptions:* In FY 2017, the investment rate of return was lowered to 6.375% from 6.75%.

# FINANCIAL SECTION

## Required Supplementary Information (Unaudited) Schedule of Changes in the Net Pension Liability and Related Ratios

### PLAN A

(in Thousands)

	FY 2018*	FY 2017*	FY 2016*	FY 2015*	FY 2014*
<b>Total pension liability</b>					
Service cost	\$ 81,996	\$ 80,892	\$ 76,121	\$ 74,949	\$ 51,438
Interest	267,900	250,988	257,134	253,796	247,768
Changes of benefit terms	-	-	-	-	-
Differences between expected and actual experience	102,264	43,910	(51,504)	80,967	-
Changes of assumptions	-	166,954	103,817	21,165	-
Benefit payments, including refunds of member contributions	(282,243)	(274,978)	(250,515)	(246,074)	(227,438)
Net change in total pension liability	169,917	267,766	135,053	184,803	71,768
Beginning total pension liability	4,259,294	3,991,528	3,856,475	3,671,672	3,599,904
Ending total pension liability: (a)	\$4,429,211	\$4,259,294	\$3,991,528	\$3,856,475	\$3,671,672
<b>Plan fiduciary net position</b>					
Employer contributions	\$ 123,028	\$ 115,276	\$ 104,306	\$ 106,912	\$ 80,127
Employee contributions	28,504	28,445	28,491	29,463	29,860
Net investment income	206,107	321,774	(25,912)	22,648	323,620
Benefit payments, including refunds of member contributions	(282,243)	(274,978)	(250,515)	(246,074)	(227,438)
Administrative expense	(1,223)	(2,350)	(1,608)	(1,651)	(1,326)
Other	-	150,000	-	-	-
Net change in plan fiduciary net position	74,173	338,167	(145,238)	(88,702)	204,843
Beginning plan fiduciary net position	2,608,407	2,270,240	2,415,478	2,504,180	2,299,337
Ending plan fiduciary net position: (b)	2,682,580	2,608,407	2,270,240	2,415,478	2,504,180
Plan's net pension liability - ending (a) - (b)	\$1,746,631	\$1,650,887	\$1,721,288	\$1,440,997	\$1,167,492
Plan fiduciary net position as a percentage of the total pension liability	60.57%	61.24%	56.88%	62.63%	68.20%
Covered payroll	\$ 356,014	\$ 380,007	\$ 382,891	\$ 390,353	\$ 403,401
System's net pension liability as a percentage of covered payroll	490.61%	434.44%	449.55%	369.15%	289.41%
Expected average remaining service years of all participants	3	4	4	4	4

\*Ten-year historical trend information is not available but will be compiled going forward.

Notes to the Schedule:

Changes of Assumptions: In FY 2017, the investment rate of return was lowered to 6.375% from 6.75%

# FINANCIAL SECTION

## Required Supplementary Information, continued (Unaudited) Schedule of Changes in the Net Pension Liability and Related Ratios

### PLAN B

(in Thousands)

	FY 2018*	FY 2017*	FY 2016*	FY 2015*
<b>Total pension liability</b>				
Service cost	\$ 28,065	\$ 22,935	\$ 17,987	\$ 13,693
Interest	8,897	6,490	5,055	4,470
Changes of benefit terms	-	-	-	-
Differences between expected and actual experience	2,942	38	(1,305)	(9,229)
Changes of assumptions	-	6,262	2,957	-
Benefit payments, including refunds of member contributions	(3,387)	(2,809)	(2,644)	(1,780)
Net change in total pension liability	36,517	32,916	22,050	7,154
Beginning total pension liability	113,167	80,251	58,201	51,047
Ending total pension liability: (a)	\$ 149,684	\$ 113,167	\$ 80,251	\$ 58,201
<b>Plan fiduciary net position</b>				
Employer contributions	\$ 5,868	\$ 2,879	\$ 1,436	\$ 1,279
Employee contributions	17,193	14,799	12,321	10,262
Net investment income	6,369	8,972	(492)	379
Benefit payments, including refunds of member contributions	(3,387)	(2,809)	(2,644)	(1,780)
Administrative expense	(49)	(43)	(39)	(31)
Other	-	-	-	-
Net change in plan fiduciary net position	25,994	23,798	10,582	10,109
Beginning plan fiduciary net position	79,075	55,277	44,695	34,586
Ending plan fiduciary net position: (b)	105,069	79,075	55,277	44,695
Plan's net pension liability - ending (a) - (b)	\$ 44,615	\$ 34,092	\$ 24,974	\$ 13,506
Plan fiduciary net position as a percentage of the total pension liability	70.19%	69.87%	68.88%	76.79%
Covered payroll	\$ 216,815	\$ 189,274	\$ 157,811	\$ 129,027
System's net pension liability as a percentage of covered payroll	20.58%	18.01%	15.83%	10.47%
Expected average remaining service years of all participants	12	12	13	13

\*Ten-year historical trend information is not available but will be compiled going forward.

Notes to the Schedule:

*Changes of Assumptions:* In FY 2017, the investment rate of return was lowered to 6.375% from 6.75%.

# FINANCIAL SECTION

## Required Supplementary Information, continued (Unaudited)

### Schedule of Investment Returns

Schedule of Investment Returns	Fiscal Year*	Rate
Annual time-weighted rate of return, net of investment expenses	2018	7.6%
Annual time-weighted rate of return, net of investment expenses	2017	13.6%
Annual time-weighted rate of return, net of investment expenses	2016	-0.8%
Annual time-weighted rate of return, net of investment expenses	2015	0.6%
Annual time-weighted rate of return, net of investment expenses	2014	13.6%

\*Ten year information is not available at this time, but will be compiled going forward.

### Schedule of Employer Contributions Last 10 Fiscal Years (in thousands)

THE SYSTEM	FY 2018	FY 2017	FY 2016	FY 2015	FY 2014	FY 2013	FY 2012	FY 2011	FY 2010	FY 2009
Actuarially Determined Employer Contribution	\$128,896	\$118,155	\$110,561	\$103,372	\$80,453	\$73,362	\$65,127	\$58,340	\$57,976	\$49,763
Contributions in relation to the Actuarially Determined Employer Contribution	<u>128,896</u>	<u>118,155</u>	<u>105,742</u>	<u>108,191</u>	<u>80,453</u>	<u>73,362</u>	<u>65,127</u>	<u>58,340</u>	<u>57,976</u>	<u>49,763</u>
Contribution Deficiency (Excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 4,819</u>	<u>\$ (4,819)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered Payroll	\$572,829	\$569,281	\$540,702	\$519,380	\$509,899	\$532,406	\$544,230	\$536,394	\$529,269	\$495,387
Contributions as a percentage of Covered Payroll	22.50%	20.75%	19.56%	19.90%	15.78%	13.78%	11.97%	10.88%	10.95%	10.05%

# FINANCIAL SECTION

## Required Supplementary Information, continued (Unaudited)

### Schedule of Employer Contributions Last 10 Fiscal Years (in thousands)

PLAN A*	FY 2018	FY 2017	FY 2016	FY 2015	FY 2014
Actuarially Determined Employer Contribution	\$123,028	\$115,276	\$109,125	\$102,093	\$80,127
Contributions in relation to the Actuarially Determined Employer Contribution	<u>123,028</u>	<u>115,276</u>	<u>104,306</u>	<u>106,912</u>	<u>80,127</u>
Contribution Deficiency (Excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 4,819</u>	<u>\$ (4,819)</u>	<u>\$ -</u>
Covered Payroll	\$356,014	\$380,007	\$382,891	\$390,353	\$403,401
Contributions as a percentage of Covered Payroll	34.56%	30.34%	27.24%	26.15%	19.86%

\*Ten-year historical trend information is not available but will be compiled going forward.

### Schedule of Employer Contributions Last 10 Fiscal Years (in thousands)

PLAN B*	FY 2018	FY 2017	FY 2016	FY 2015	FY 2014
Actuarially Determined Employer Contribution	\$5,868	\$2,879	\$1,436	\$1,279	\$326
Contributions in relation to the Actuarially Determined Employer Contribution	<u>5,868</u>	<u>2,879</u>	<u>1,436</u>	<u>1,279</u>	<u>326</u>
Contribution Deficiency (Excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered Payroll	\$216,815	\$189,274	\$157,811	\$129,027	\$106,498
Contributions as a percentage of Covered Payroll	2.71%	1.52%	0.91%	0.99%	0.31%

\*Ten-year historical trend information is not available but will be compiled going forward.



# FINANCIAL SECTION

## Notes to the Required Supplementary Information (Unaudited)

The actuarial method and assumptions used in the calculations of the actuarially determined employer contributions (ADEC) are calculated as of July 1, two years prior to the end of the fiscal year in which contributions are reported (i.e., the contribution determined by the valuation completed as of June 30, 2016 was contributed in the fiscal year ending June 30, 2018). Additional information as of the latest actuarial valuation follows:

Valuation Date:	January 1, 2018
Actuarial cost Method:	Projected Unit Credit
Normal Cost Allocation:	Service
Amortization Method:	Level percent closed
Remaining Amortization Period:	Fresh start as of July 1, 2015 over 30 years
Asset Valuation Method	10- year smoothed fair value without corridor
Actuarial Assumptions:	
-Investment Rate of Return <sup>(1)</sup>	6.375%
-Projected Salary Increases <sup>(2)</sup>	1.90% - 6.80% select for FY15 – FY16 3.00% - 6.80% ultimate for FY17 and thereafter
-Cost-of-Living Adjustments <sup>(3)</sup>	None
-Healthy Mortality (Male)	108% of RP-2000 Healthy Annuitant Male Table projected to 2027 with Scale AA
-Healthy Mortality (Female)	RP-2000 Healthy Annuitant Female Table projected to 2027 with Scale AA
-Disabled Mortality	RP-2000 Disabled Annuitant Tables projected to 2027 with Scale AA

(1) Includes inflation at 3.0% and net of gain sharing.

(2) Includes inflation at 3.0%.

(3) Increases equal to the CPI up to a maximum of 3% are granted to qualifying members only if only if sufficient reserves have accumulated in the Post Retirement Increase Fund.

\*Beginning with the January 1, 2018 actuarial valuation, actuarially determined contribution amounts are calculated as of the beginning of the calendar year (January 1) for the fiscal year ending in the following calendar year. Prior to the January 1, 2018 valuation, actuarially determined contribution amounts were calculated as of the beginning of the fiscal year (July 1) for the year immediately following the fiscal year. Actuarial valuations are performed every year.

# FINANCIAL SECTION

## Supplementary Supporting Schedules

### Schedule of Investment Expenses For the Years Ended June 30, 2018 and 2017 (in Thousands)

	<u>FY 2018</u>	<u>FY 2017</u>
Investment managers:		
Domestic equity managers	\$ 4,082	\$ 3,681
International equity managers	3,489	3,164
Fixed income managers	3,317	2,970
Private equity managers	5,434	3,045
Real estate managers	1,630	1,585
Hedge fund managers	0	0
Global asset allocation managers	2,842	2,560
Total manager fees	<u>20,794</u>	<u>17,005</u>
Investment service fees:		
Custodian fees	298	293
Consultant fees	309	303
Total service fees	<u>607</u>	<u>596</u>
<b>Total investment fees and expenses</b>	<u>\$ 21,401</u>	<u>\$ 17,601</u>

### Schedule of Administrative Expenses For the Years Ended June 30, 2018 and 2017 (in Thousands)

	<u>FY 2018</u>	<u>FY 2017</u>
Personal services:		
Salaries	\$ 594	\$ 613
Employee fringe benefits	238	234
Total personal services	<u>832</u>	<u>847</u>
Professional and contractual services:		
Contractual Services	-	9
Actuarial	256	421
Legal and financial	58	63
Data processing	21	34
Medical	43	44
Total Professional and Contractual services	<u>378</u>	<u>571</u>
Miscellaneous services:		
Communication	54	85
Equipment and supplies	8	8
Total miscellaneous services:	<u>62</u>	<u>93</u>
<b>Total administrative expenses</b>	<u>\$ 1,272</u>	<u>\$ 1,511</u>